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ABSTRACT

By using a path analytic model, this study seeks to determine the relationship of school organizational stressors to teacher stress in public high schools. The model included three stress variables (emotional exhaustion, depersonalization, and degree of personal accomplishment), seven organizational health characteristics, a motivational variable, and three variables for statistical control. Surveying 786 teachers from a group of 50 Connecticut high schools, researchers asked about job characteristics, organizational climate, and job-related feelings. It was found that variation in stress from school to school was strongly related to selected organizational health variables but that stress does not vary much among schools. Need satisfaction proved valuable in explaining how organizational variables related to stress. It was also found that organizational health may account more for differences in stress within schools than for those between schools. (JW)

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THE RELATIONSHIP OF TEACHER STRESS TO ORGANIZATIONAL AND ROLE-RELATED STRESSORS

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THE RELATIONSHIP OF TEACHER STRESS TO ORGANIZATIONAL AND ROLE-RELATED STRESSORS

Introduction and Problem Statement

Maslach (1978), Ryerson (1982), Reed (1979) and others have argued that the conditions of work are a major factor in the stress of social service workers, implying that significant alleviation of job stress can be obtained through appropriate management of the work place. While a number of studies provide partial support for this position (e. g., Cichon and Koff, 1980; Pierson & Archambault, 1982), we have not found a study which demonstrates that different schools have different levels of the hypothesized stressors, and that teacher reports of stress symptoms varies in these sites accordingly. Therefore, the study addressed the following question: What is the relationship of teacher stress to organizational stressors?

Theoretical Rationale

A Framework for Studying Stress in Schools. Drawing on an analysis by Iwanicki (1983), the study hypothesized a set of relationships among organizational stressors, role-related stressors, and levels of teacher stress. Organizational stressors arise from the conditions of work. We used Miles (1969) model of organizational health to represent and measure these stressors. His set of 10 organizational characteristics refer to behavior

and relationships that typify the way all school tasks are undertaken. These 10 dimensions are goal focus, communication adequacy, optimal power equalization, resource utilization (effective use of people), cohesiveness, morale, innovativeness, autonomy, adaptativeness, and problem solving adequacy.

Role-related distress results from the personality and preparation of the teachers as they relate to job demands. Poor attitudes, low motivation, and lack of specific skills are potential factors in role-related distress. Role-related distress was represented in this study by need satisfaction as conceived by Maslow (1943) and adapted by Porter (1961), and it has a demonstrated relationship both with stress and with school organizational variables (Anderson, 1980; Carver & Sergiovanni, 1971; Pierson & Archambault, 1982).

The general phenomon of stress has been defined and described by Selye (1974,1978) and others. The present research used the more specific definition of job-related stress, or burnout, developed and validated by Maslach and Jackson (1981). In this definition, burnout is the result of chronic, negative stress characteristic of social service occupations. More specifically, stress or burnout has three aspects: emotional exhaustion, depersonalization (distancing from colleagues and clients), and a lack of a sense of personal accomplishment.

In sum, it is hypothesized that these three aspects of stress may be related to any of the aspects of organizational

health directly, or indirectly through a relationship with teacher need satisfaction as pictured in Figure 1.

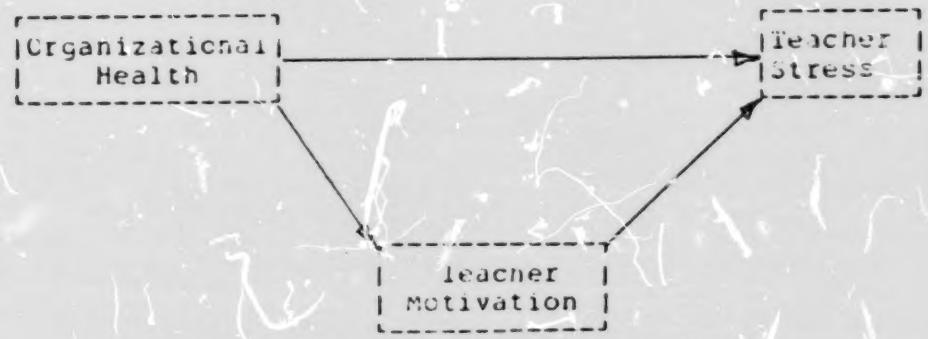

Figure 1: A Model of Teacher Stress

Research Questions

1. To what extent are school average levels of teacher stress in public high schools related directly to the dimensions of school organizational health?

2. To what extent are school average levels of teacher stress in public high schools related indirectly to the dimensions of school organizational health through a relationship with average levels of teacher need satisfaction?

3. To what extent does this set of school-level relationships explain the total variation in teacher stress?

Review of Related Literature

The following review summarizes the major empirical support for relationships of teacher stress with organizational health, need satisfaction, and the personal and professional variables used in the study.

Organizational Variables and Teacher Stress

Two of the most frequently cited concerns relate to job or time pressure, excessive paperwork, clerical duties, and school assignments, which are aspects of resource utilization. Also in this category are complaints of the shortages of materials and equipment, ineffective organization, unrealistic expectations from supervisors and lack of support or consultation functions (Bausch, 1981; Cichon & Koff, 1980; Fletcher & Payne, 1982; Kyriacou & Sutcliffe, 1978; Olson & Matuskey, 1982; Turk & Litt, 1982).

Two frequently cited school factors are related to Optimal Power Equalization: One is too little teacher influence on key decisions that affect day to day work, and the other is too little teacher discretion to handle one's own job in one's own way. Abuse of power (Bausch, 1981), administrative decision-making (Pierson & Archambault, 1982), teacher-administrator rules (Amodio, 1981), and "little opportunity to influence key decisions" (Kyriacou & Sutcliffe, 1978) are all matters of power and authority that have been empirically supported as organizational sources of teacher stress.

Several studies have cited situations or problems that appear to be related to morale. Lack of recognition or concern generally, and lack of recognition for extra effort in particular (Kyriacou & Sutcliffe, 1978) is one aspect of this. Kyriacou and Sutcliffe also cite poor attitudes and behavior on the part of the school leader and colleagues, and poor student attitudes as part of an overall concern with "school ethos". Satisfaction with seeing results or lack of such satisfaction (Fletcher & Payne, 1982) appears to be another aspect of school morale that may be related to teacher stress.

Lack of concern and support is also cited frequently as being important to teachers in connection with job stress (Fletcher & Payne, 1982; Turk & Litt, 1982). This complaint may be most strongly related to a lack of cohesiveness in the school, a sense that staff don't pull together.

Outside of these four dimensions, support for the importance of other aspects of organizational health as potential sources of teacher stress is less strong. For instance, Lemaster (1981) examined the relationship of stress to organizational climate, and the data supported a relationship with "Openness", suggesting that Communication Adequacy could be an added school organizational factor in teacher stress. In addition, Problem Solving and Goal Focus may be implied in many of the cited concerns.

The research thus provides support for Resource Utilization, Morale, Cohesiveness, and Optimal Power Equalization, with fur-

ther indications that other organizational health factors may be important in teacher stress. On balance, the empirical work done thus far supports the use of the organizational health variables to conceptualize and measure organizational sources of stress in school.

Role-related Sources of Stress

Anderson (1980) showed that two of the higher level Malsow needs, self-actualization and esteem, were most strongly related to Emotional Exhaustion and less strongly related to Depersonlization and Personal Accomplishment. In a multiple regression study of teacher stress, Pierson and Archambault (1982) used need satisfaction along with several other predictors and found that, for classroom teachers, self-actualization and social needs were significant predictors of stress, with somewhat different patterns for the different aspects of stress. These two studies provide strong support for a relationship between need satisfaction and teacher stress.

Two other role variables, educator role and grade level, appear to be important for guiding research in this field. Pierson and Archambault (1982) and Fimian (1982) have shown that stress varies among classroom teachers, special education teachers, school psychologists, and reading consultants. Schwab and Iwanicki (1982) produced data indicating that grade level taught may be related to stress, with more stress at the secondary level.

Correlational research has been conducted on other role variables, including locus of control (McIntyre, 1982), and role conflict and role ambiguity (Pierson & Archambault, 1982; Schwab, 1980/1981). A limitation of the present study is that these and other potential role variables have not been controlled.

Personal and Professional Variables and Stress

Numerous studies examining the relationship of stress to various background variables have been conducted, with mixed results. had mixed results. While some studies find no differences in levels of stress in teachers grouped on these variables. But it is usually but not always found that males, younger, and less experienced teachers have more stress. (Anderson, 1980; Crane, 1981/1982; Fimian, 1982; Raison, 1981; Schwab, 1980/1981). Studies of educational level, class size, and other variables have generally found little support. See Fimian (1982) for a detailed review. Trusty and Sergiovanni (1966) found that the various levels of teacher need satisfaction are also related to teacher gender and age, and perhaps to teaching experience.

In sum, gender, age and experience of the teacher appear to be related to both teacher stress and to need satisfaction.

Methodology

Research Design

The major objective of the study was to determine the relationship of school organizational stressors to teacher stress using an exploratory path analytic model. The model includes three stress variables, school organizational health characteristics, a motivational variable, and three variables for statistical control. The study used sample survey research methodolgy to address this objective. Schools were objects of study (unit of analysis), and teachers were objects of measurement (unit of observation). The survey data was collected from mid-April to mid-May of 1983. The design is a post-hoc design, and causal inferences can only be drawn with risk. The design controlled for teacher role by sampling only regular classroom teachers, and for grade level taught by sampling only high schools and high school teachers. Teacher gender, age and experience were controlled statistically.

Instrumentation

Teacher Stress. Perceived teacher stress was measured using a self-report measure, the Maslach Burnout Inventory (MBI), with two adaptations. The MBI measures three dimensions of stress or burnout: emotional exhaustion, depersonalization, and (lack of) personal accomplishment. The 22-item MBI measures the emotional exhaustion scale with nine items, the depersonalization scale

with five items, and the personal accomplishment scale with eight items. The term "client" used in the original was replaced by the term "student" as done by Schwab (1980/1981). Each item in the original was rated on two scales, one for the intensity of occurence, and one for the frequency of occurence of certain experiences. Only the intensity scales were used in this study in order to shorten the overall questionnaire.[1] The intensity scales rate each item on an 8-point scale ranging from "not applicable" to "very strong".

The MBI authors report extensive data in the manual supporting the content and construct validity of the instrument (Maslach & Jackson, 1981). Content validity was established by basing items on clinical experience and a review of the items in similar scales. Construct validity was supported using correlations with the ratings of co-workers and spouses, and a variety of job characteristics. Factor analysis supported the three factors postulated by Maslach & Jackson (1981). The factor composition of the teacher version was shown to be quite similar to the original by Iwanicki and Schwab (1981). They showed that the internal consistency reliabilities of the intensity of Emotional Exhaustion, Depersonalization and Personal Accomplishment were .89, .79, and .75 respectively.

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[1] This usage had been suggested by Iwanicki and Schwab (1981), who showed high correlations (.75 to .94) between the three pairs of frequency and intensity scales.

Need Satisfaction. Need satisfaction was measured using the Porter Need Satisfaction Questionnaire (PNSQ) which was designed to measure security, social, esteem, autonomy, and self-actualization needs (Porter, 1961). We used the adaptation of Trusty and Sergiovanni (1966), in which respondents answer 13 items on a 7-point scale, once to obtain desired ratings and a second time to obtain actual ratings. The score for each item was the difference between the desired and actual ratings.

A recent study by Pierson, Archambault, and Iwanicki (1984) using a sample of teacher groups provides data which supports single factor scoring when used with the current items.[2] Internal consistency reliability was .89 in this format.

The PNSQ and the MBI were professionally typeset and printed on a single form along with items for the demographic variables and a letter of introduction. A copy is shown in the Appendix.

Organizational Health. An experimental instrument, the Organizational Health Instrument, Form B, (OHI), was designed to measure the 10 Miles' dimensions with 80 items on a 5-point Likert scale with response options ranging from "strongly agree" to "strongly disagree". Construct validity was supported by showing that its subscales significantly discriminated between healthy and unhealthy schools. Scales were also shown to correlate with the ratings of central office administrators from .51 to .67

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[2] The study encouraged two-factor scoring, but only with additional items to improve the second factor whose reliability was only .55.

(Holmes, 1980; Fairman, Holmes, Hardage & Lucas, 1979). Factor composition and scale reliabilities have not been reported by the developers, so these procedures were conducted in preparation for the current study.

The principal component analysis with oblique rotation produced 13 factors, 7 of which were judged reliable enough for this study. The derived factors, number of items, and internal consistency reliabilities are presented in Table 1. The first derived factor termed Leadership involved the collapse of two Miles dimensions, Communication Adequacy and Problem Solving, into a single factor with 19 items and correspondingly high reliability. Other derived scales included Cohesiveness, Adaptiveness, Morale, and Optimal Power Equalization. Another factor, Resource Utilization, had a reliability (.64) that was lower than desired, but we thought that the importance of this factor in the stress literature warranted retaining it. Finally, a factor with items from the Goal Focus dimension did not appear to adhere closely to Miles' definition. We called it Planning and note that we did not necessarily see it as a dimension of organizational health, although it may be.

The OHI and response sheet are integrated on a professionally printed "op-scan" sheet provided by the developers. A facsimile of each side is shown in the Appendix.

TABLE 1

Factors and Reliabilities: OHI, Form B

Derived Factors	No of Items	Alpha Rel.
"Leadership"	19	.96
Cohesiveness	10	.88
Adaptiveness	6	.70
Morale	6	.81
Resource Utilization	6	.64
Optimal Power Eq.	7	.81
"Planning"	8	.81

Sample

The study used a two-stage sample. First, a simple random sample of 90 drawn from the Connecticut population of public high schools. Of these, 50 schools agreed to participate. These schools constituted over a third of the population and were representative of regions of the state and types of community. In the second stage an average of 26 teachers per school was drawn from rosters of regular classroom teachers provided by the principals. Since the number of teachers per school varied from 25 to 120 teachers per school, the sample was optimized by designing for equal precision of estimate of the variable means in each

school. The sampling fractions from this procedure ranged from 75% in the smallest schools to 25% in the largest, roughly 20 to 30 teachers per school, or 1300 total.

Data Collection Procedures

Data collection involved three steps. First, an initial letter was sent to sampled school principals describing the study, indicating the endorsement of the Connecticut Association for Secondary Schools, and requesting support and a roster of classroom teachers. Second, the survey materials were sent to participating schools for distribution. Third, a follow-up letter was sent through principals to non-respondents after two weeks. These procedures resulted in 883 returns of which 786 (60.5% of 1300) were usable.

Analyses

The third research question was answered first using analysis of variance to compute the correlation ratios (eta squared) for the three stress measures. Eta-squared gives the percentage of between-schools variation in stress, and proved to be sufficient to weigh the importance of the school-level model.

Following tests of assumptions, the first two research questions were addressed with a path analysis using the weighted school means of the variables as the data set (Cronbach, 1976). The path analysis was conducted using a series of multiple re-

gression analyses (MRA). The model was trimmed, and the goodness of fit was tested (Pedhazur, 1982).

Results

The Correlation Ratios

The correlation ratios were statistically significant but modest for Emotional Exhuastion and Depersonalization (9% and 8%). The value for Personal Accomplishment was only slightly less (7%), but was not statistically significant. The smaller value indicates that there is less between-schools variation in this variable.

The meaning of the correlation ratios is illustrated below in Figure 2. In the top of the figure, data are given for Emotional Exhaustion. The range of Emotional Exhaustion scores for individual teachers is shown in each of three schools, the one with the lowest average, the one with the highest average, and one whose average is near the median. School average values are shown with an x. The data are scaled for display against the scales used to measure the items. The figure show that the range of reported stress is typically very wide in each school, regardless of the average in the school. The bottom of the figure shows comparison data for Leadership, which had the highest correlation ratio (26%) of any variable in the study. By comparison with Emotional Exhaustion, there is little overlap in the range of teacher responses between the lowest, the average, and the highest school in the sample.

```
School                          Note: x - School
  ID                                    Average

  48          |------x----------|

  19          |-----------x----------------|

  16                  |----------x-----------------|
            ---------------------------------------------
            0     1     2     3     4     5     6     7
                        Emotional Exhaustion
                     Correlation Ratio = .09

  ---------------------------------------------------

  29              |--x-----|

  30                    |----x----|

  33                          |----------x----|
            ---------------------------------------
            1         2         3         4         5
                            Leadership
                     Correlation Ratio = .26
```

Figure 2: Distribution of Selected Variables as a Function of School Mean Score and Correlation Ratio

The Path Analysis

The between-school and within-school data sets sets[3] were tested for linearity of relationship, correlations among residuals, and homogeneity of within-class regressions Cronbach & Webb, 1975; Burstein, Linn, & Capell, 1978). These assumptions were

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[3] Within-school data consisted of the deviation from school mean scores for each respondent on each variable.

found to be satisfied. Following this step multiple regression analyses (MRAs) were conducted for the four endongenous (dependent) variables (three stress variables plus need satisfaction) using all the predictors. Statistically significant equations were produced for all equations. The data also confirmed anticipated problems of multi-collinearity and of too many variables for the sample size. Multi-collinearity was manifest as beta weights with large magnitudes (as high as .59) but with signs opposite to their zero-order correlations with the dependent variables. These "unmatched" betas appeared only after several other organizational variables were already in the equation. Collinearity was also evident between Teacher Age and Teacher Experience which are correlated above .80.

Second, excessive shrinkage also appeared as the number of variables increased above four or five in the presence of the "unmatched" betas. These betas are substantively uninterpretable. For instance, it is not plausible to advise principals to improve stress in the school by making schools less Adaptive while improving Resource Utilization. Consequently, the trimmed or final model produced by the analyses to follow must eliminate the variables with the unmatched signs to help deal with these two problems. Since removing them will also remove statistically signifant portions of the variance accounted for, their removal may also tend to cloud the effects of removing other paths which are merely unimportant. It was therefore thought desirable to

first remove the collinearity effects, and then finish the traditional trimming process in a separate step. Dealing with collinearity began with attempts to cluster the predictors.

One approach to alleviating the two statistical problems of multi-collinearity and shrinkage is to combine some of the variables. One attempt combined all seven OH scales, and a second approach combined small groups of variables. In both cases it was found that the cluster variables were poorer predictors of the dependent variables than a single variable within the cluster. Clustering the variables was consequently not used because the clusters contained too little information.

Given that only 7-9% of the variance of the three stress variables was between schools suggests that at most only one or two predictors for each endogenous variable can be of any practical or theoretical use. Therefore, a single set of compatible variables was first sought that could be used with every endogenous variable, but no set was found that was both compatible and important for all the endogenous variables. Consequently, the model was reduced independently for each endogenous variable. To alleviate multi-collinearity, MRAs were conducted iteratively to determine the optimum set of matched-sign predictors. This procedure reduced the total number of predictors and the excessive shrinkage, and it led to the reduced model described and analyzed below.

Analysis of the Reduced Model

MRA results for the reduced model are given in Tables 2 - 5. These tables show for each predictor the unstandardized regression weight and its standard error, the standardized beta weight in relation to the full equation shown, the t value for the beta weight, and, finally, the standardized beta weight at the point of entry. Summary statistics are shown at the end, and after the entry of the final variable included in the trimmed model. The trimming process itself was based on statistical significance, and had the effect of retaining paths with standardized betas of approximately .30 or more. This may seem like a high standard, but it must be noted that, in an aggregate level model, correlations tend to run much higher than usual because much of the variance has already been removed. The values are also consistent with selection on the basis of a scree test of beta weights.

Table 2 shows that variables retained in the reduced model of Emotional Exhaustion include Resource Utilization, Leadership, Need Satisfaction, Teacher Age and Gender. Of these, the beta weight for Resource Utilization was the only significant variable, and it had the largest beta weight by far (.457). Adjusted R^2 was also larger after the entry of this single variable than than after all five were entered.

Table 3 shows that six predictors were included in the regression on Depersonalization: Need Satisfaction, Teacher Gender and Experience, and three organizational variables, Planning, Re-

Table 2
Results for Multiple Regression on Emotional Exhaustion

Name of Predictor	Unstandardized beta (b)	Standard Error of b	Standardized beta	t	beta at entry
Resource Utilization	1.127	.381	.457	2.96**	.501
R = .501	R^2 = .251	R^2 (adjusted) = .235			
Teacher Age	.214	.171	.161	1.25	.158
Leadership	.047	.063	.102	.75	.098
Teacher Gender	2.588	3.976	.088	.65	.098
Need Satisfaction	.035	.148	.037	.24	.037
R = .542	R^2 = .294	R^2 (adjusted) = .212			

source Utilization, and Leadership. With all six predictors in the equation, none was statistically significant. However, the beta for Need Satisfaction was significant when that variable was in the equation alone.

The regression on Personal Accomplishment (Table 4) included Planning, Teacher Age, Need Satisfaction, and Leadership. There were no significant betas with the full equation. The beta for Planning alone was significant or not, depending on the number of decimal places used to read the value of p. Beta weights are negative for this variable because the scale is reverse scored in relation to the other stress measures.

Table 5 shows that the regression on Need Satisfaction includes Morale, Optimal Power Equalization, Resource Utilization, Adaptiveness, Teacher Gender and Age. Variance accounted for (over .5) is much higher than for the stress variables. Three of the betas are statistically significant: Morale, Optimal Power Equalization, and Teacher Gender. However, the one for Gender is marginal.

One of the interesting side results evident in Tables 2 - 5 is that variance accounted for is more than twice as high for Need Satisfaction (54%) as for the best predicted of the stress variables, Emotional Exhaustion (25%). Organizational health seems to be more important for motivation than for stress.

The final equations for the trimmed model are given in Table 6 which can be summarized as follows. First, there were signifi-

Table 3
Results for Multiple Regression on Depersonalization

Name of Predictor	Unstandardized beta (b)	Standard Error of b	Standardized beta	t	beta at entry
Need Satisfaction	.087	.074	.190	1.17	.420 *
R = .420	R^2 = .176	R^2 (adjusted) = .158			
Planning	.156	.124	.210	1.26	.272
Resource Utilization	.320	.180	.272	1.78	.241
Teaching Experience	-.143	.100	-.188	-1.43	-.198
Teacher Gender	1.292	1.895	.092	.68	.087
Leadership	.010	.036	.046	.28	.046
R = .571	R^2 = .326	R^2 (adjusted) = .230			

Table 4
Results for Multiple Regression on Personal Accomplishment

Name of Predictor	Unstandardized beta (b)	Standard Error of b	Standardized beta	t	beta at entry
Planning	-.161	.149	-.194	1.07	-.279
R = .279	R^2 = .078	R^2 (adjusted) = .058			
Teacher Age	-.125	.098	-.178	1.27	-.200
Need Satisfaction	-.083	.078	-.103	1.06	-.163
Leadership	-.011	.042	-.043	.25	-.043
R = .374	R^2 = .140	R^2 (adjusted) = .062			

Table 5
Results for Multiple Regression on Need Satisfaction

Name of Predictor	Unstandardized beta (b)	Standard Error of b	Standardized beta	t	beta at entry
Morale	.556	.261	.309	2.13*	.678
Optimal Power Equalization	.726	.275	.330	2.64*	.350
R = .734	R^2 = .538	R^2 (adjusted) = .518			
Teacher Gender	6.489	3.104	.210	2.09*	.167
Resource Utilization	.407	.304	.157	1.34	.164
Teacher Age	.157	.141	.113	1.11	.084
Adaptiveness	.267	.263	.124	1.02	.124
R = .775	R^2 = .600	R^2 (adjusted) = .543			

cant paths retained for each of the four endogenous variables. However, the single path retained for Personal Accomplishment was marginal. It was retained to show that a fourth and distinct organizational variable was consequential in relation to school level averages of Personal Accomplishment. Alternatively, it might have been judgementally deleted to show that school level averages of Personal Accomplishment are virtually unrelated to school organizational health. Both interpretations are worth noting. Overall, the four endogenous variables include at one point Need Satisfaction, Resource Utilization, Optimal Power Equalization, Morale, and Planning. None of the background variables was retained.

The trimmed model of teacher stress was tested for goodness of fit with the "reduced" model from which it was derived. The chi-square tests were not significant, indicating that the trimming process did not remove major paths. Figure 3 summarizes the results of the path analysis of the three stress variables, Emotional Exhaustion, Depersonalization, and Personal Accomplishment. Values on each path represent the standardized beta weights for the path, and those in parentheses are the zero-order correlations, which are the same as the betas in most instances. The values of u in the figure represent the residuals from each multiple regression, and its value in each case is the square root of the variance not accounted for. This figure shows that school average levels of Emotional Exhaustion are systematically

Table 6
Multiple Regressions: Trimmed Model of Teacher Stress

Name of Predictor	Unstandardized beta (b)	Standard Error of b	Standardized beta	t	R	R^2	R^2 adj.
			Emotional Exhaustion				
Resource Utilization	1.236	.307	.501	4.01**	.501	.251	.235
			Depersonalization				
Peer Satisfaction	.191	.059	.420	3.20**	.420	.176	.158
			Personal Accomplishment				
Planning	-.230	.115	-.279	2.01*	.279	.078	.058
			Need Satisfaction				
Morale	.844	.222	.469	3.80**			
Optimal Power Equalization	.770	.271	.350	2.84**	.734	.538	.518

and directly related to teacher perceptions of Resource Utilization with a Beta weight above .50. Average levels of Depersonalization are related to perceptions of Morale and Optimal Power Equalization, but indirectly through a relationship with average levels of teacher Need Satisfaction. Finally, Personal Accomplishment is directly but weakly related to perceptions of what we have termed Planning.

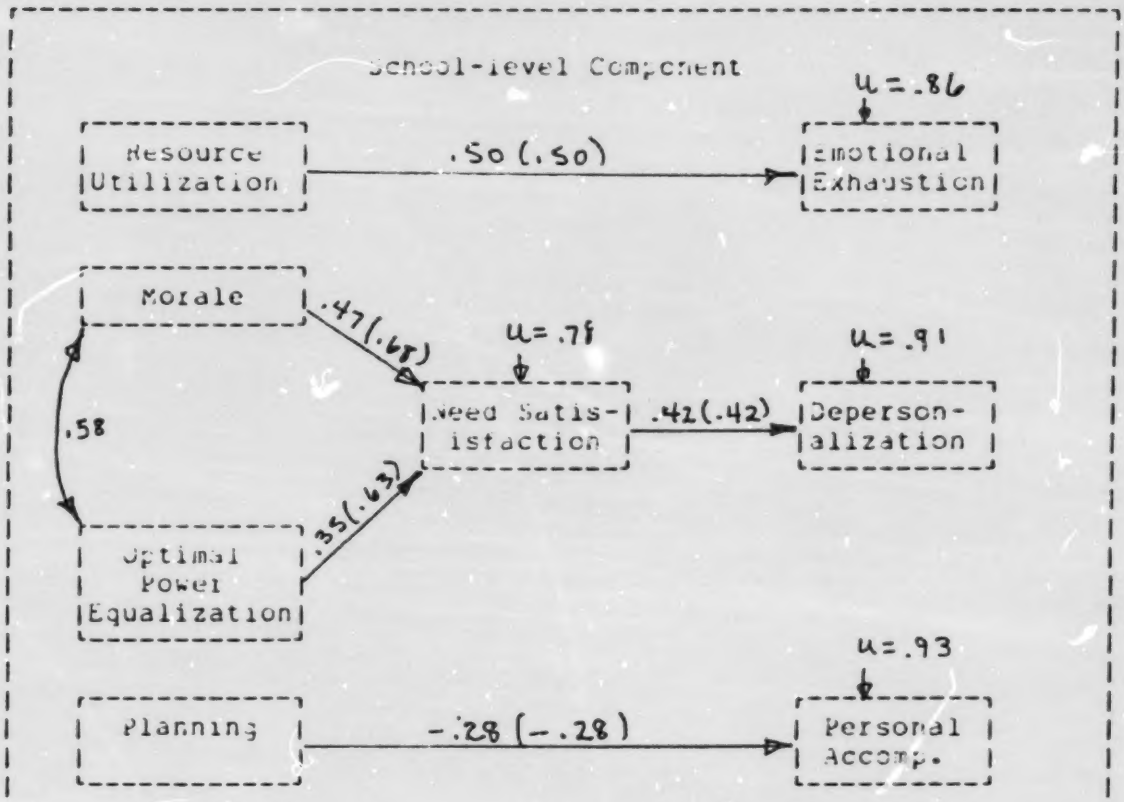

Figure 3: Trimmed Model of Teacher Stress

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Having completed the planned path analysis of the school-level component, an unplanned analysis of the teacher-level component is now considered.

A Variation of the Teacher-level Model. When the model was planned, a teacher level component was not included because there was no unambiguous meaning which could be assigned to within-schools differences in the perceptions of school organizational health. Nevertheless, regression analysis of such data was run at the teacher level as if this were a part of the model. It turned out that the organizational variables were significant predictors at the teacher level and the results suggestive. Therefore these results are briefly summarized and discussed. No data are given.

Resource Utilization, Morale, and Need Satisfaction significantly predicted Emotional Exhaustion, and the two organizational variables accounted for about 9% in incremental variance. Resource Utilization, Morale, Need Satisfaction and Gender were significant predictors of Depersonalization, and the two organizational variables here accounted for about 7% of the within-schools variance. Morale accounted for about 1% of the variance in Personal Accomplishment while predicting in concert with Need Satisfaction. Finally, Optimal Power Equalization, Morale, Resource Utilization, Adaptiveness, Leadership, and Teacher Age (in that order) significantly predicted Need Satisfaction. The or-

ganizational health variables accounted for 36% of the variance in Need Satisfaction at the teacher level.

What do these results mean? Resource Utilization and Morale account for more of the total variance in stress (and much more of the variance in Need Satisfaction) while operating at the teacher level than at the school level. Consequently, it seems that perceptions of school organizational stressors in this and other studies do not reflect a consensus about school operations. Instead they predominantly reflect within-school phenoma. The following are possible explanations of this finding: 1) The perceptions of a given teacher may be predominantly affected by a few people whose performance is key for them but not others in the school, e. g., the department head. 2) Perceptions may be biased because of the informal network. Excessive exposure to cynics, gossips, or other "stress-makers" in the school may jaundice one's outlook. 3) Locus of control, uncontrolled in this study, may influence both stress and the perception of the organization. Teachers who do not exercise enough control over their own territory may also tend to blame the results on others.

In short, only a portion of the reported school organizational sources of stress can reasonably be attributed to the school as a whole. Much of these perceptions are either subjective or localized phenomenon in the school. This means that a substantial part of school stressors may be under the control or influence of the stressed teacher (Smith, 1980). An administra-

tor or teacher concerned with stress should therefore be looking for particular individuals or situations around which problems arise, as well as more pervasive qualities in the organization.

A second finding of note in these unplanned data is that the organizational health variables are much better predictors of motivation than they are of stress. This was also found at the school level, but it is much more dramatic at the teacher level. This data suggests, among other things, that improvements in organizational health could be more pertinent for improving organizational effectiveness than for alleviating stress. This data may provide some indirect support for quality circles and other recent strategies for improving schools.

Discussion of the Stress Model

The overall purpose was to examine the relationship of teacher stress to organizational health variables as hypothesized measures of organizational sources of teacher stress. This exploration was conducted with the aid of a path analytic model. When data at the school level were examined, it was found that variation in stress from school to school was strongly related to selected organizational health variables, especially Resource Utilization, Optimal Power Equaization, and Morale. This result was consistent with other studies. In addition, it was found that Need Satisfaction, which was hypothesized to be a role variable rather than an organizational variable, played a distinct

role in explaining how some but not other organizational variables were related to school average levels of teacher stress. This combination of results also provided significant support for the original conception of the model, and for the use of Miles' concept of Organizational Health as a basis for measuring organizational sources of teacher stress.

The next important result was that teacher stress simply does not vary that much from school to school, while the reported levels of individual stress vary widely within nearly all of the 50 schools in the study. Therefore the idea that that there are schools that present much higher risk of stress to teachers than others, and that most of the teachers in those schools have much higher levels of stress as a result does not find much support from these data.

Within schools, the results confirmed those of Anderson and Iwanicki (1981) and of Pierson and Archambault (1982) who found that Need Satisfaction is related to teacher stress at levels similar to those found here. In addition, in some unplanned analyses, it was also found that the organizational health variables, especially Resource Utilization and Morale, accounted for more of the variance in teacher stress within schools than between schools. This led to the speculation that informal networks, the performance of specific individuals, and the personality of the stressed teacher may be important in stress and in how teachers perceive the effectiveness of their schools.

The data suggest that further research at the school level to study the relationship of organizational stressors to teacher stress will probably not be especially fruitful. The study of the relationship of organizational health to teacher motivation may hold more interesting possibilities. Any school level study must take care, however, to sample schools and to use the school as the unit of analysis (Hubert, Gable, & Iwanicki, 1983).

It appears that the dynamics of teacher relationships within schools may hold some promise in understanding the mechanisms of teacher stress. The processes by which teachers are socialized into the school, how they choose their closer relationships, and what effects those choices have on their professional development may be worth studying if we are to get a better understanding of the sources of teacher stress.

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SURVEY OF PROFESSIONAL OCCUPATIONS

Background Information

The main part of this survey will require approximately 15 minutes to complete. First, however, please answer the following three questions which provide a general perspective about the background you bring to work.

1. Your sex: ☐ Male ☐ Female

2. Your age: _____

3. How many years of full-time employment in education have you completed, including the current year? _____

General Instructions

This survey consists of three parts. Before completing each part, please read the instructions carefully. Please use a No. 2 pencil when responding. Answer all questions as honestly and completely as you can.

Returning the Survey

Please do not fold these survey forms. Check to see that all items have been completed. Then mail both survey forms in the self-addressed, stamped envelope provided.

Thank you again for your assistance.

SURVEY OF PROFESSIONAL OCCUPATIONS

PART I

Several characteristics or qualities connected with your school position are listed below. For each such characteristic, you are asked to answer the following questions:

a. How much of the characteristic is there **now** connected with your school position?

b. How much of the characteristic do you think **should be** connected with your school position?

For each of the following 13 items answer questions a. and b. above by circling a number from 1 to 7 on the corresponding scale. Low numbers represent low amounts or low importance, and high numbers represent high amounts or high importance.

	HOW MUCH OF THE CHARACTERISTIC	
	a. Now (Low – High)	b. Should Be (Low – High)
1. The prestige of my school position inside the school (that is, the regard received from others in the school).	1 2 3 4 5 6 7	1 2 3 4 5 6 7
2. The prestige of my school position outside of the school (that is, the regard from others not in the school).	1 2 3 4 5 6 7	1 2 3 4 5 6 7
3. The opportunity to develop close friendships in my school position.	1 2 3 4 5 6 7	1 2 3 4 5 6 7
4. The feeling of security in my school position.	1 2 3 4 5 6 7	1 2 3 4 5 6 7
5. The opportunity, in my school position, to give help to other people.	1 2 3 4 5 6 7	1 2 3 4 5 6 7
6. The opportunity, in my school position, for participation in the setting of goals.	1 2 3 4 5 6 7	1 2 3 4 5 6 7
7. The authority connected with my school position.	1 2 3 4 5 6 7	1 2 3 4 5 6 7
8. The opportunity for independent thought and action in my school position.	1 2 3 4 5 6 7	1 2 3 4 5 6 7
9. The opportunity, in my school position, for participation in the determination of the methods and procedures.	1 2 3 4 5 6 7	1 2 3 4 5 6 7
10. The opportunity for personal growth and development in my school position.	1 2 3 4 5 6 7	1 2 3 4 5 6 7
11. The feeling of self-fulfillment a person gets from being in my school position (that is, the feeling of being able to use one's own unique capabilities, realizing one's potentialities).	1 2 3 4 5 6 7	1 2 3 4 5 6 7
12. The feeling of worthwhile accomplishment in my school position.	1 2 3 4 5 6 7	1 2 3 4 5 6 7
13. The feeling of self-esteem a person gets from being in my school position.	1 2 3 4 5 6 7	1 2 3 4 5 6 7

PART II: Please complete the enclosed **Organizational Health Instrument.** Ignore the Additional Questions section (items 81-91) on the back of this instrument.

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ORGANIZATIONAL HEALTH INSTRUMENT (FORM B)

School Level

Fairman, Holmes, Hardage, & Lucas

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DO NOT STAPLE

SCHOOL _____

CODE NO.
0 0 0
1 1 1
2 2 2
3 3 3
4 4 4
5 5 5
6 6 6
7 7 7
8 8 8
9 9 9

DIRECTIONS FOR RECORDING RESPONSES

- Use a No. 2 pencil only.
- The following questions relate to various aspects of your school and its environment. Darken the response choice which corresponds to your feelings about each item.
- Do not spend too much time on any particular item. Please answer every item. There are no right or wrong answers.

EXAMPLE:

I like being a part of our faculty. SA ● U D SD

By completely filling in the "A" response choice, this illustrates general agreement with the statement.

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. Few teachers at this school are chosen as resource people.	SA	A	U	D	SD
2. Teachers at this school write yearly objectives.	SA	A	U	D	SD
3. There is much controversy over school objectives.	SA	A	U	D	SD
4. This school makes a notable contribution to community enrichment.	SA	A	U	D	SD
5. Individual talents of teachers at this school are properly utilized.	SA	A	U	D	SD
6. Teachers in this school are competent in the positions they hold.	SA	A	U	D	SD
7. Teachers feel this building has a positive atmosphere.	SA	A	U	D	SD
8. The primary purpose of this school is to survive the school year.	SA	A	U	D	SD
9. Teachers in this school feel they have too little power to affect district policy.	SA	A	U	D	SD
10. The faculty of this school accepts new challenges readily.	SA	A	U	D	SD
11. Harmony exists in this school because all personnel feel they are able to adequately influence decisions.	SA	A	U	D	SD
12. The principal realizes that communication is essential.	SA	A	U	D	SD
13. This school has the authority to make rules and regulations related to its particular situation.	SA	A	U	D	SD
14. The school studies innovations carefully before choosing a new approach.	SA	A	U	D	SD
15. Teachers have too large a teaching load.	SA	A	U	D	SD
16. Administrator(s) in this school do not encourage teacher autonomy.	SA	A	U	D	SD
17. This school can cope with change.	SA	A	U	D	SD
18. The community is not involved in facilitating change at this school.	SA	A	U	D	SD
19. The principal feels that teachers do not have the skills to participate in making decisions.	SA	A	U	D	SD
20. School objectives are clear to the faculty.	SA	A	U	D	SD
21. The faculty works together to achieve school objectives.	SA	A	U	D	SD
22. Administrative statements at this school are misleading.	SA	A	U	D	SD
23. Teachers at this school become inefficient when working together as a group.	SA	A	U	D	SD
24. The principal listens to the teachers.	SA	A	U	D	SD
25. Teachers at this school trust each other enough to allow for conflict in the problem-solving process.	SA	A	U	D	SD
26. Teachers try to plan exciting new solutions when a need exists.	SA	A	U	D	SD
27. Teachers' confidence in the principal makes their jobs easier.	SA	A	U	D	SD
28. Teachers at this school enjoy working together.	SA	A	U	D	SD
29. The principal has to approve every little thing before it is tried.	SA	A	U	D	SD
30. The principal goes from problem to problem without fully solving them.	SA	A	U	D	SD
31. The principal is concerned with short and long range solutions to problems.	SA	A	U	D	SD
32. The staff in this school develops new programs.	SA	A	U	D	SD
33. The principal demonstrates effective problem-solving skills in daily work.	SA	A	U	D	SD
34. The principal knows and utilizes the strengths of teachers.	SA	A	U	D	SD
35. Solutions to problems are implemented through well-thought-out procedures.	SA	A	U	D	SD
36. Teachers do not have the authority to make decisions in situations that affect their work.	SA	A	U	D	SD

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37. The principal believes he/she can mandate change.	SA	A	U	D	SD
38. Teachers at this school have a feeling of well-being.	SA	A	U	D	SD
39. Resources are always available for teachers to improve their skills.	SA	A	U	D	SD
40. Teachers in this school are receptive to parental concerns.	SA	A	U	D	SD
41. Teachers have the freedom to use their own judgment in their work.	SA	A	U	D	SD
42. The principal tries to keep morale high.	SA	A	U	D	SD
43. Teachers in this school work to keep their performance at the level expected by their peers.	SA	A	U	D	SD
44. Efforts at this school are easily coordinated because of effective communication.	SA	A	U	D	SD
45. Teachers wish they could work in a different school.	SA	A	U	D	SD
46. The administration at this school communicates its stand on issues.	SA	A	U	D	SD
47. The community expects this school to stay the same year after year.	SA	A	U	D	SD
48. Teachers feel uncomfortable in their work situation.	SA	A	U	D	SD
49. Talent rather than seniority is the deciding factor in the assignment of responsibility in this school.	SA	A	U	D	SD
50. This school seldom has problems.	SA	A	U	D	SD
51. The principal tries to keep our staff working together.	SA	A	U	D	SD
52. The principal tries to protect professional freedom.	SA	A	U	D	SD
53. The official lines of communication in this school carry reliable information.	SA	A	U	D	SD
54. Objectives of this school are continuously revised.	SA	A	U	D	SD
55. There is mutual support among members of the school staff.	SA	A	U	D	SD
56. School and community efforts at this school are cooperative.	SA	A	U	D	SD
57. Time is available for solving problems at this school.	SA	A	U	D	SD
58. The same person always has the final say on policy changes in this school.	SA	A	U	D	SD

59. The yearly objectives at this school fit into a long-range plan.	SA	A	U	D	SD
60. Teachers in this school do not feel an allegiance to each other.	SA	A	U	D	SD
61. The policies of this school make it difficult for creativity to emerge.	SA	A	U	D	SD
62. The principal creates opportunities for all teachers to influence important decisions.	SA	A	U	D	SD
63. Teachers in this school have adequate control over rules and regulations which govern them.	SA	A	U	D	SD
64. The school staff doesn't check to see that they reflect community needs.	SA	A	U	D	SD
65. When problems are identified, no new solutions are devised.	SA	A	U	D	SD
66. The teachers at this school pull together to get things done.	SA	A	U	D	SD
67. Innovative efforts are seen as important in this school.	SA	A	U	D	SD
68. Teachers in this school are usually the last to know.	SA	A	U	D	SD
69. Teachers feel overloaded by clerical duties.	SA	A	U	D	SD
70. The best source of information is the secretary.	SA	A	U	D	SD
71. The school does not strive to meet the needs of teachers.	SA	A	U	D	SD
72. The policy of this school tries to keep parents out of the classroom.	SA	A	U	D	SD
73. The goals of this school are challenging.	SA	A	U	D	SD
74. Job descriptions in this school are rigid, giving little opportunity for self-determination.	SA	A	U	D	SD
75. Extra-curricular assignments make teachers feel over-worked.	SA	A	U	D	SD
76. This school can not tolerate the stress brought about by change.	SA	A	U	D	SD
77. The principal capitalizes on his/her own skills as well as those of the staff.	SA	A	U	D	SD
78. The teachers at this school are encouraged to try new methods.	SA	A	U	D	SD
79. Strengths of the staff are used by the principal.	SA	A	U	D	SD
80. Planning continuously takes place in this school.	SA	A	U	D	SD

ADDITIONAL QUESTIONS

81. 1 2 3 4 5 6 7 8 9 10

82. 1 2 3 4 5 6 7 8 9 10

83. 1 2 3 4 5 6 7 8 9 10

84. 1 2 3 4 5

85. 1 2 3 4 5

86. 1 2 3 4 5

87. 1 2 3 4 5

88. 1 2 3 4 5

89. 1 2 3 4 5

90. 1 2 3 4 5

91. 1 2 3 4 5

DO NOT FOLD OR BEND

PART III

Below there are 22 statements of job-related feelings you might have. Please read each statement carefully and decide if you ever feel this way **about your job.**

If you have **never** had this feeling, circle the "0" (zero) and go on to the next statement. If you have had this feeling, decide "HOW STRONG" this feeling is when you experience it by circling the number (from 1 to 7) that best describes how strongly you feel it.

EXPLANATION OF THE SCALE

0	1	2	3	4	5	6	7
Never	Very Mild (Barely Noticeable)			Moderate			Very Strong (Major)

	HOW STRONG							
1. I feel emotionally drained from my work.	0	1	2	3	4	5	6	7
2. I feel used up at the end of the work day.	0	1	2	3	4	5	6	7
3. I feel fatigued when I get up in the morning and have to face another day on the job.	0	1	2	3	4	5	6	7
4. I can easily understand how my students feel about things.	0	1	2	3	4	5	6	7
5. I feel I treat some students as if they were impersonal "objects."	0	1	2	3	4	5	6	7
6. Working with people all day is really a strain for me.	0	1	2	3	4	5	6	7
7. I deal very effectively with the problems of my students.	0	1	2	3	4	5	6	7
8. I feel burned out from my work.	0	1	2	3	4	5	6	7
9. I feel I'm positively influencing other people's lives through my work.	0	1	2	3	4	5	6	7
10. I've become more callous toward people since I took this job.	0	1	2	3	4	5	6	7
11. I worry that this job is hardening me emotionally.	0	1	2	3	4	5	6	7
12. I feel very energetic.	0	1	2	3	4	5	6	7
13. I feel frustrated by my job.	0	1	2	3	4	5	6	7
14. I feel I'm working too hard on my job.	0	1	2	3	4	5	6	7
15. I don't really care what happens to some students.	0	1	2	3	4	5	6	7
16. Working directly with people puts too much stress on me.	0	1	2	3	4	5	6	7
17. I can easily create a relaxed atmosphere with my students.	0	1	2	3	4	5	6	7
18. I feel exhilarated after working closely with my students.	0	1	2	3	4	5	6	7
19. I have accomplished many worthwhile things in this job.	0	1	2	3	4	5	6	7
20. I feel like I'm at the end of my rope.	0	1	2	3	4	5	6	7
21. In my work, I deal with emotional problems very calmly.	0	1	2	3	4	5	6	7
22. I feel students blame me for some of their problems.	0	1	2	3	4	5	6	7

This coding has been provided to enable appropriate analysis of your response. Please do not change or erase this information.